

# XCU FUSION 2SM

316L stainless-steel intelligent dual imager camera with singlemode fiber

## DESCRIPTION

Rugged dual imaging camera for demanding environments. Utilizing both thermal imaging and a visible light in one single camera, its applications are endless: from perimeter surveillance, fire detection up to incident monitoring in traffic. The XCU and its accessories are double protected against corrosion; they are entirely made of powder-coated stainless-steel (316L). The housing is hermetically sealed against water and dust, which makes it ideal for harsh environments like traffic, tunnels, marine, offshore, heavy industry, waste management, etc. The direct-to-fiber connection makes it suitable to cover long distances and less susceptible for interferences.

## FEATURES

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Dual imager: 10x zoom Full-HD + Uncooled thermal imager

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Compact, robust, and corrosion free

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powder-coated 316L stainless steel housing

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100Mb/s duplex single mode fiber

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Plug & Play

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Nano glass optical window

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Water and dust tight: IP66 & IP67

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ONVIF Profile S

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## Description

The XCU Fusion is designed to operate in harsh and aggressive environments. Typical applications are found in the heavy industry, traffic, tunnels, waterways, waste treatment and even in the salty environment of the marine. The XCU Fusion combines a full-HD ultra-low light imager with an uncooled thermal imager for both day and night vision.

### Plug & Play

Installing and commissioning IP cameras has become child's play. The XCU Fusion clicks into place with its versatile mounting accessories and is operational by plugging in the external connector. No need to open the unit; all connections can be prepared in advance.

### Integrated 10x zoom visible HD camera

The XCU Fusion is fitted with a full-HD 2 Mpixel camera. Its 10x optical zoom offers an ideal coverage of the scene from almost any viewpoint. The viewing angle ranges from 54° up to 4.9°. Remote focus assist, a full set image enhancement tools and its ultra-low light performance makes this a versatile camera for a range of applications.

### Integrated thermal camera

The XCU Fusion is also fitted with a highly sensitive uncooled microbolometer for thermal imaging. It detects temperature differences as small as 50 mK and can spot heat sources invisible to the naked eye. When the darkness obscures the vision of the optical imager, the thermal camera gives a clear over view of what's going on.

### Multi-streaming and multi-casting

The XCU Fusion has multi-streaming capabilities for simultaneous transmission of one or more H.264 streams combined with MJPEG. This guarantees interoperability with existing VMS systems. Multiple combinations of resolution and frame rate can be configured to satisfy different live viewing and recording scenarios. In addition, multi-casting is supported for complex, multi-user video networks.

### Open standards

Out of the box, the XCU Fusion integrates with the common VMS systems. Being ONVIF Profile S compliant, the camera is supported without having a dedicated driver. When dedicated software or driver is needed the camera offers a comprehensive HTTP API. This specifically enables deployment in projects with custom requirements.

#### Built-in video analysis

The XCU Fusion series offers on-board analytics, such as FlameGuard™ for flare monitoring or fire/hotspot detection and FenceGuard™ for intrusion detection or virtual fences. Their applications are endless.

#### Direct to fiber connection

The XCU Fusion 2SM is fitted with an Ethernet over fiber connection. With it it can span distances up to 30 km over duplex single mode fiber (OS1) without the problems of radio interference or power surges. On top of that fiber connections are hard to hack and therefor much more secure than CAT5 or CAT6 connections.

Camera housing	
Body material	316L stainless steel
Finishing	Powder coated (RAL9016)
Sunshield	Optional (316L powder coated, RAL9016)
Heater/Demister	Standard
Ingress protection	IP66, IP67
Corrosion Class	C5 (ISO 12944)
Impact rating casing	IK10
Solar radiation test	MIL-STD-810, method 505.4 (p.4)
Shock test (transportation)	MIL-STD-810, method 516.5
Vibration (IEC 50068-2-6)	10 Hz to 150 Hz, 0.5g, all 3 axes, 1 oct/min, 1 sweep
Max wind velocity	240 km/h (150 mph)
Operating temperature	-34 °C to +74 °C (-29 °F to 165 °F) - per Nema TS-2
- Continuous (sheltered, air temp)	-30 °C to +55 °C (-22 °F to 131 °F)
- Cold start	-30°C (-22 °F)
Relative Humidity	5% to 100%
Dry heat test	+75 °C, 24 hours
Weight	5 kg

Optical Imager	
Lens	10x zoom, 5.1 to 51 mm, F/1.6 to F/1.8
Horizontal field of view	54° (W) to 4.9°(T)
Lens type	motorized zoom
Features	BLC, HLC, auto/manual white balance, noise reduction, defog
Digital image stabilizer	Yes
Exposure	Auto/Manual/Shutter priority/Iris priority
Day/Night (IR-cut filter)	Auto/Manual
Focus	Auto/Manual/Push-to-focus

Thermal imager (TxxSx)	
Imager	uncooled micro-bolometer
Pixel pitch	17 µm
Resolution	
- Txx-S6 or Txx-F6	640x512
- Txx-S3	366x256
Focal length (xx=)	7.5mm    9 mm    13 mm    19 mm    25 mm    35 mm
- Field of view 640x512 (S6)	90°x69°    69°x56°    45°x37°    32°x26°    25°x20°    18°x14°
- f-number	f/1.4    f/1.4    f/1.25    f/1.25    f/1.1    f/1.5
- Field of view 366x256 (S3)	45°x35°    35°x27°    25°x19°    17°x13°    13°x10°    9.3°x7.1°
- f-number	f/1.4    f/1.25    f/1.25    f/1.25    f/1.1    f/1.5
Spectral bandwidth	7.5 µm to 13.5 µm (LWIR)
Max frame rate	
- TxxSx version	8.3/7.5 fps
- TxxFx versions	25/30 fps

# Specs



Thermal imager (TxxSx)	
Sensitivity (NEdT)	50 mK @ f/1.0
Time to image	less than 60 s
Digital zoom	No
Color palette	10 selectable color palettes with freely adjustable temperature thresholds

Video stream	
Number of streams	2x streams for optical image and 2x streams for thermal image
Aspect ratio	16:9, 16:10, 5:4, 4:3 (cropped, no scaling, one setting for both sensors)
Compression algorithm(s)	H.264 BP/MP/HP (H.264/MPEG-4 AVC), MJPEG

Supported output resolutions	
- Optical image	1920x1080; 1280x1024; 1280x720; 720x576; 704x576; 640x480; 480x576, 352x576; 704x288; 352x288; 320x240; 176x144
- Thermal image	Output images are up or down scaled 720x576; 704x480; 704x240; 640x512, 352x288; 336x256, 176x120
- Combined optical/thermal	Side-by-side, Thermal Picture-In-Picture in Optical image
Compression bit rate control	Variable bit rate (VBR)
Output bit rate (per H.264 stream)	Up to 6Mb/s
Number of video output streams	Up to 20 (RTSP) per input
Total output data rate (max)	50Mb/s
Video overlay	3x Text, 1x bitmap (BMP, GIF) in both optical and thermal image

Analytics	
FenceGuard	Intrusion detection. Free form zones or detection lines
- Detection line	Touch, Cross (directional sensitive), Cross
- Detection zone	Touch, Enter, Inside, Exit
FlameGuard	Hotspot detection in two zones or Flare-on, Flare-off and Flare-too-large monitoring
- Measuring range	-40°C to 550°C
- Accuracy	+/- 20 °C (T 100 °C)
- Improved accuracy (-R1)	+/- 5 °C (T 100 °C; +/- 2°C typical)
Event time	0 to 10 s
Event output	generic ONVIF, SPI

Electrical	
Supply voltage	24 Vac 50/60 Hz or 24 Vdc (Galvanic isolated)
Power consumption	12 W heater off; 15 W heater on
Power connector	3-pin 7/8" Conec
Network connector	Conec IP67 Dual LC

Network	
Interface(s)	100 Mb duplex singlemode Ethernet, Dual LC, 30 km
Protocols	IPv4, TCP/IP, UDP, RTP, RTSP, HTTP, HTTPS, ICMP, FTP, SMTP, DHCP, UPnP, IEEE 802.1x (EAP-MD5 or EAP TLS), IGMP, SNMP, QoS, ONVIF, TLS1.2, NTCIP-1205

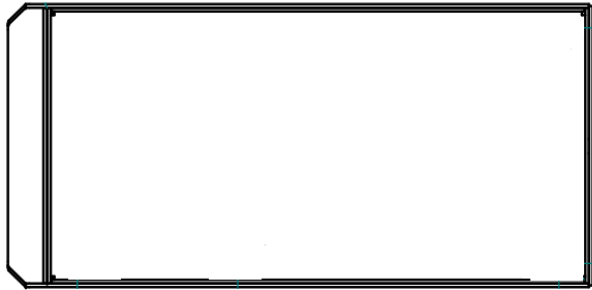
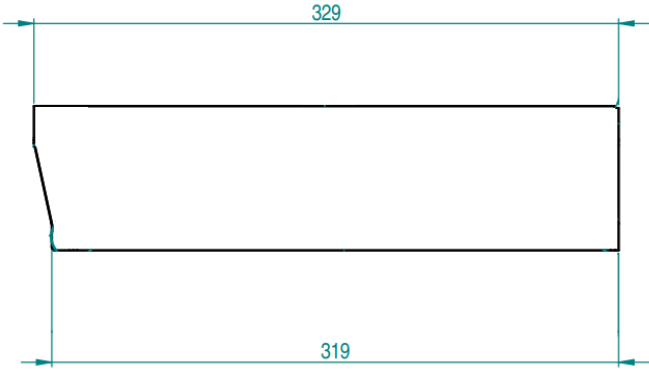
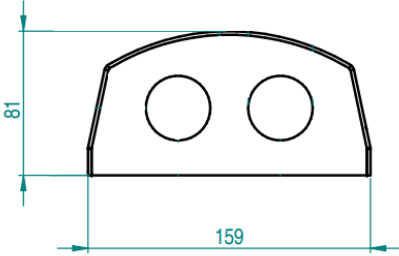
Network	
Password levels	Viewer, Operator and Administrator
Supported browsers	Edge, Chrome, Firefox, Safari
User accounts	20

Ordering information	
XCU-F T75S3-2SM	XCU Fusion 316L dual imager, 2Mp 10x, 366 45° 8.3fps, 2SM
XCU-F T09S3-2SM	XCU Fusion 316L dual imager; 2Mp 10x, 366 35° 8.3fps, 2SM
XCU-F T13S3-2SM	XCU Fusion 316L dual imager; 2Mp 10x, 366 25° 8.3fps, 2SM
XCU-F T19S3-2SM	XCU Fusion 316L dual imager; 2Mp 10x, 366 17° 8.3fps, 2SM
XCU-F T25S3-2SM	XCU Fusion 316L dual imager; 2Mp 10x, 366 13° 8.3fps, 2SM
XCU-F T35S3-2SM	XCU Fusion 316L dual imager; 2Mp 10x, 366 9° 8.3fps, 2SM
XCU-F T75S6-2SM	XCU Fusion 316L dual imager; 2Mp 10x, 640 90° 8.3fps, 2SM
XCU-F T09S6-2SM	XCU Fusion 316L dual imager; 2Mp 10x, 640 69° 8.3fps, 2SM
XCU-F T13S6-2SM	XCU Fusion 316L dual imager; 2Mp 10x, 640 45° 8.3fps, 2SM
XCU-F T19S6-2SM	XCU Fusion 316L dual imager; 2Mp 10x, 640 32° 8.3fps, 2SM
XCU-F T25S6-2SM	XCU Fusion 316L dual imager; 2Mp 10x, 640 25° 8.3fps, 2SM
XCU-F T35S6-2SM	XCU Fusion 316L dual imager; 2Mp 10x, 640 18° 8.3fps, 2SM
XCU-F T75F6-2SM	XCU Fusion 316L dual imager; 2Mp 10x, 640 90° 30fps, 2SM
XCU-F T09F6-2SM	XCU Fusion 316L dual imager; 2Mp 10x, 640 69° 30fps, 2SM
XCU-F T13F6-2SM	XCU Fusion 316L dual imager; 2Mp 10x, 640 45° 30fps, 2SM
XCU-F T19F6-2SM	XCU Fusion 316L dual imager; 2Mp 10x, 640 32° 30fps, 2SM
XCU-F T25F6-2SM	XCU Fusion 316L dual imager; 2Mp 10x, 640 25° 30fps, 2SM
XCU-F T35F6-2SM	XCU Fusion 316L dual imager; 2Mp 10x, 640 18° 30fps, 2SM
Add -R1 (e.g., XCU-F T09F6R1-2SM) for improved accuracy	

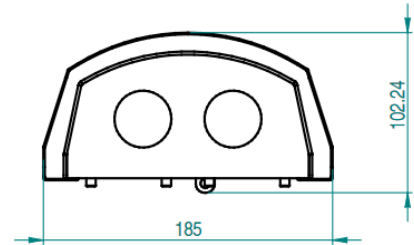
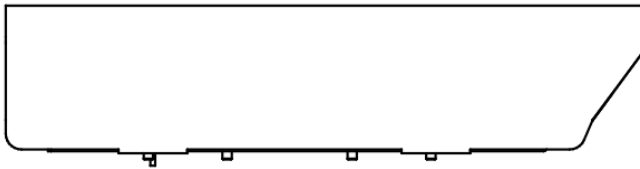
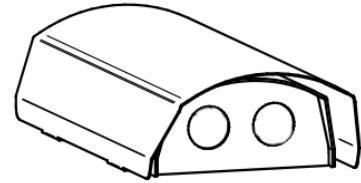
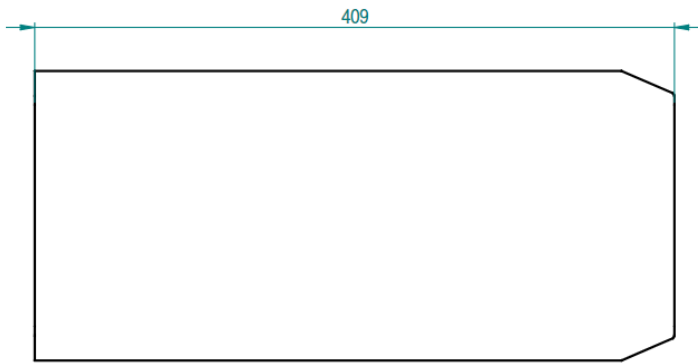
Mounting accessories	
XCUWM01	XCU 316L Wall/Pole mount with swivel, RAL9016
XCUCM01	XCU 316L Rugged ceiling mount, RAL9016
XCUSW01	XCU 316L Swivel mount (swivel only), RAL9016

Cable connectors	
XCUCNC-PWR01	XCU IP67 power connector straight, cable part (included)
XCUCNC-2SM	XCU IP67 SM fiber connector straight, cable part (included)

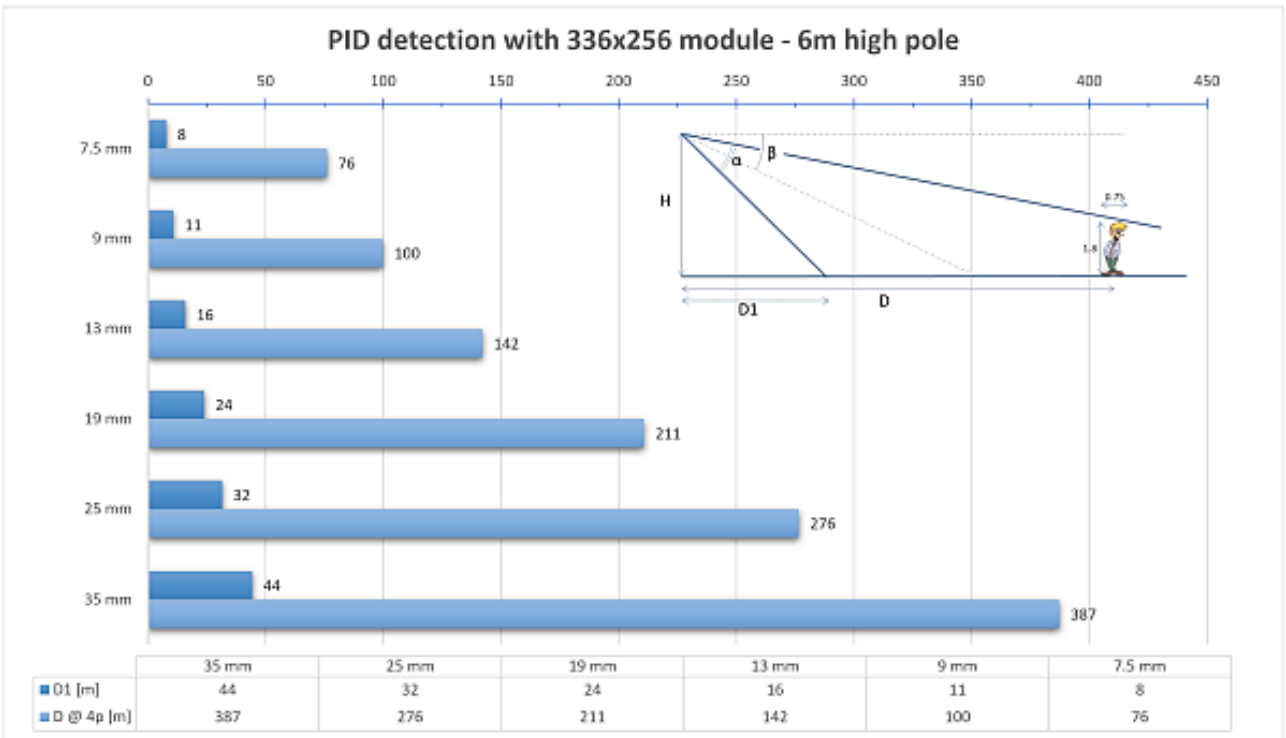
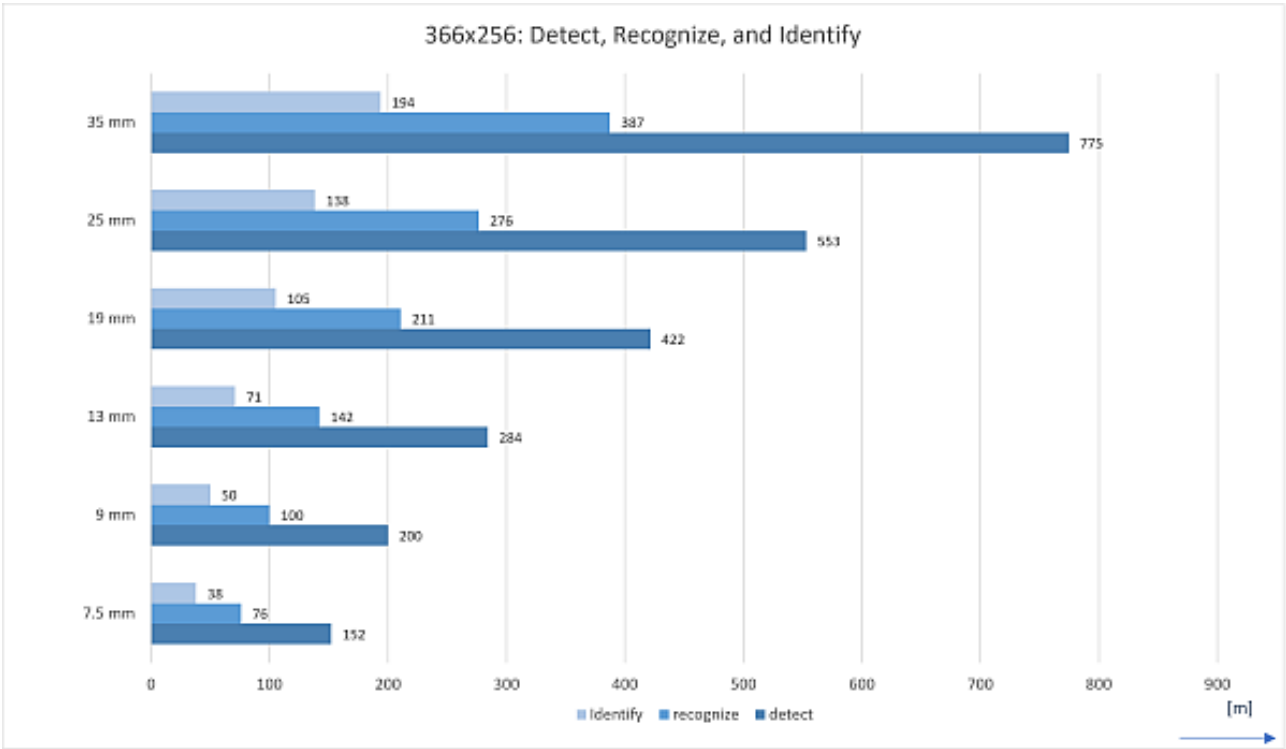
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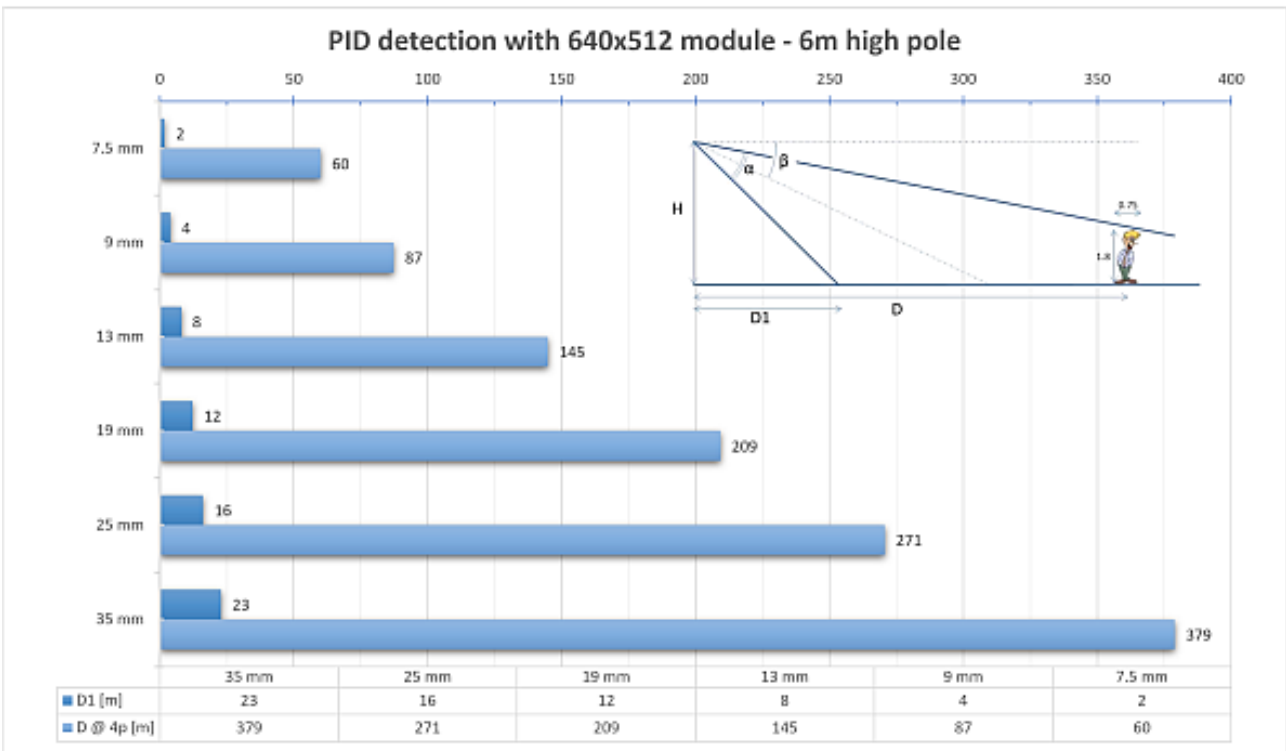
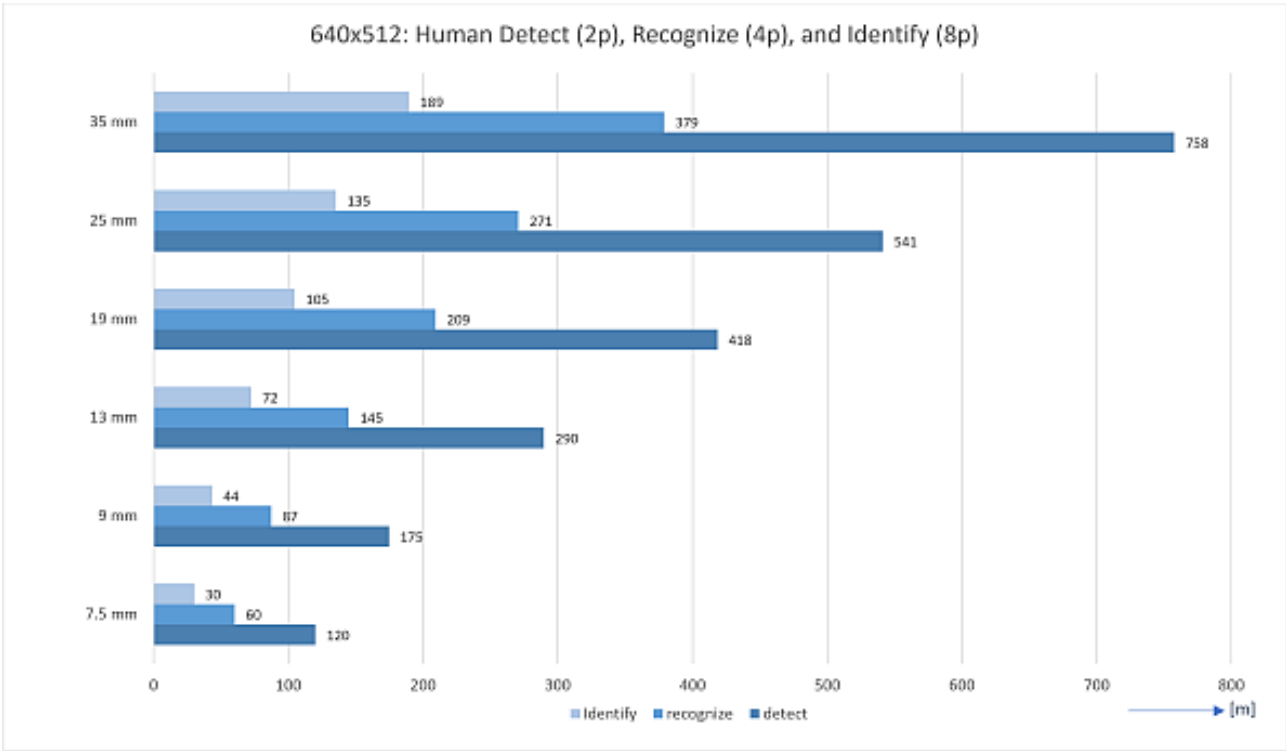


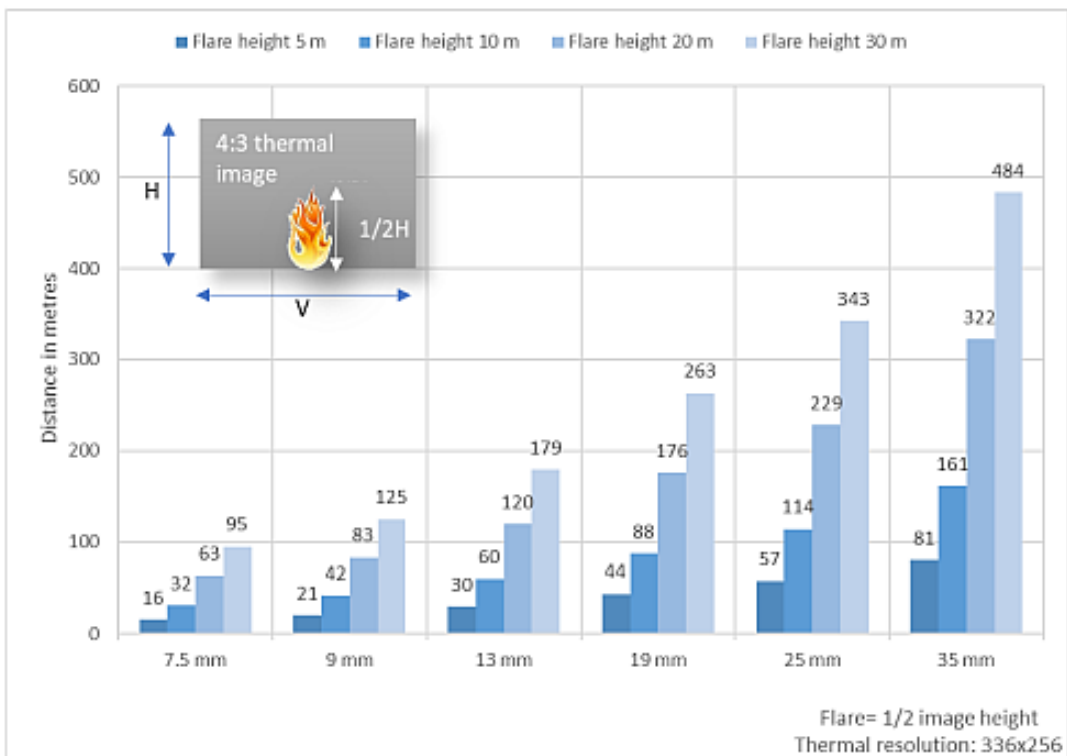
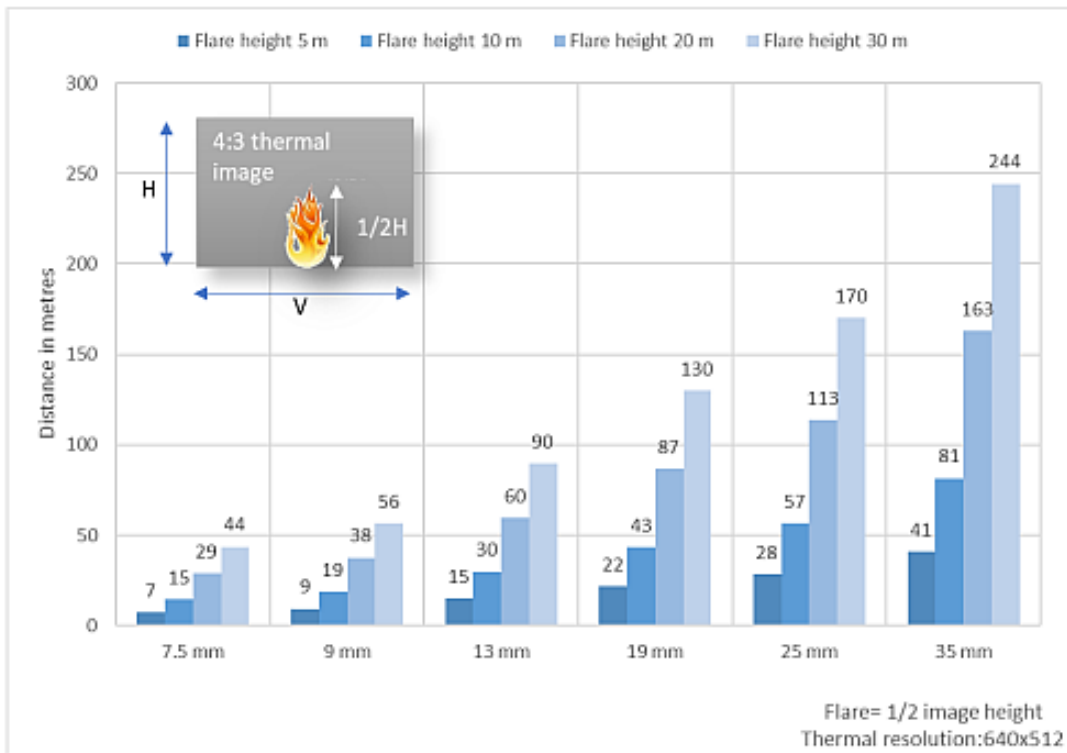
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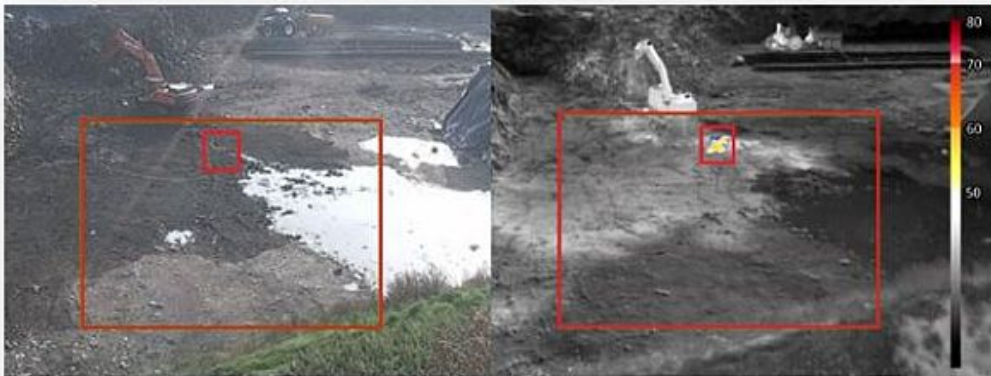












*FlameGuard: Hotspot detection at a waste management site*



*Flame Guard: Fire detection in a machine room*



*FenceGuard: Perimeter intrusion detection*



*Fire detection, hot-spot and flare monitoring*